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UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant : Frank KOWALEWSKI
Serial No. : 10/089,395
Filed : July 17, 2002
For : DATA TRANSMISSION METHOD
Examiner : Anh-Vu H. LY
Art Unit : 2616
Confirmation No. : 5213

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Jong H. Lee

**APPELLANT'S APPEAL BRIEF
UNDER 37 C.F.R. § 41.37**

SIR :

Applicant filed a Notice of Appeal dated October 1, 2008 (received at the PTO on October 6, 2008), appealing from the Final Office Action dated April 16, 2008, in which claims 9-16 of the above-identified application were finally rejected. This Brief is submitted by Applicant in support of his appeal.

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I. REAL PARTY IN INTEREST

The real party in interest in the present appeal is IPCoM GmbH & Co. KG of Pullach, Germany. IPCoM GmbH & Co. KG is the assignee of the entire right, title, and interest in the present application.

II. RELATED APPEALS AND INTERFERENCES

No appeal or interference which will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal is known to exist to the undersigned attorney or is believed by the undersigned attorney to be known to exist to Applicant.

III. STATUS OF CLAIMS

Claims 9-16 are currently pending in the present application and are being appealed. Among the appealed claims, claim 9 is independent, and claims 10-16 ultimately depend on claim 9. Claims 1-8 were canceled in the Preliminary Amendment dated March 29, 2002.

IV. STATUS OF AMENDMENTS

No amendment has been filed subsequent to the final Rejection mailed on April 16, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

With respect to independent claim 9, the present invention provides a data transmission method including:

transmitting a data signal between a transmitter and a receiver as a data stream of data bursts (B) in either a first transmission mode or a second transmission mode; (Fig. 1a; Substitute Specification, p. 4, l. 10-26);

in the first transmission mode, transmitting a reference signal (RS) by the transmitter in each data burst (B), the reference signal being evaluated in the receiver; (Fig. 1b; Sub. Spec., p. 4, l. 28-30); and

in the second transmission mode, avoiding transmitting the reference signal by the transmitter in each data burst (B) and instead transmitting additional redundancy data (RD) of the data signal in each data burst (Fig. 1c; Sub. Spec., p. 5, l. 1-3);

wherein a selection between the first transmission mode and the second transmission mode is made, said selection being dependent on whether interference elimination is performed at the receiver or at the transmitter (Subs. Spec., p. 3, l. 5-6; p. 4, l. 10-19).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review on appeal in this case:

(A) Whether pending claims 9-10, 13 and 15-16 are unpatentable under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,724,815 ("Jepsen") in view of U.S. Patent No. 6,657,949 ("Jones") and Applicant's admitted prior art ("AAPA").

(B) Whether pending claims 11-12 are unpatentable under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,724,815 ("Jepsen"), U.S. Patent No. 6,657,949 ("Jones"), and Applicant's admitted prior art ("AAPA"), and further in view of U.S. Patent No. 5,113,413 ("Brown").¹

(C) Whether pending claim 14 is unpatentable under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,724,815 ("Jepsen"), U.S. Patent No. 6,657,949 ("Jones"), and Applicant's admitted prior art ("AAPA"), and further in view of U.S. Patent No. 6,760,589 ("Hobbis").²

VII. ARGUMENTS

A. Rejection of Claims 9-10, 13 and 15-16 under 35 U.S.C. 103(a)

Claims 9-10, 13 and 15-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,724,815 ("Jepsen") in view of U.S. Patent No. 6,657,949

¹ On p. 6 of the Final Office Action, the Examiner states that the rejection is based on the combination of Jepsen, Jones, Klein, and Brown, but the Examiner never identifies what Klein is, let alone discusses Klein in the detailed discussion of the rejection. Applicant assumes for the purpose of this appeal that "Klein" refers to AAPA.

² On p. 6 of the Final Office Action, the Examiner states that the rejection is based on the combination of Jepsen, Jones, Klein, and Hobbis, but the Examiner never identifies what Klein is, let alone discusses Klein in the detailed discussion of the rejection. Applicant assumes for the purpose of this appeal that "Klein" refers to AAPA.

("Jones") and Applicant's admitted prior art ("AAPA"). Applicant respectfully submits that this rejection should be withdrawn, for at least the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. M.P.E.P. §2143. In addition, as clearly indicated by the Supreme Court, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. See KSR Int'l Co. v. Teleflex, Inc., 82 U.S.P.Q.2d 1385 (2007). In this regard, the Supreme Court further noted that "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." Id., at 1396. To the extent that the Examiner may be relying on the doctrine of inherent disclosure in support of the obviousness rejection, the Examiner must provide a "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art." (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Independent claim 9 recites, in relevant parts, "transmitting a data signal between a transmitter and a receiver as a data stream of data bursts in either a first transmission mode or a second transmission mode; in the first transmission mode, transmitting a reference signal by the transmitter in each data burst, the reference signal being evaluated in the receiver; and in the second transmission mode, avoiding transmitting the reference signal by the transmitter in each data burst and instead transmitting additional redundancy data of the data signal in each data burst; wherein a selection between the first transmission mode and the second transmission mode is made, said selection being dependent on whether interference elimination is performed at the receiver or at the transmitter." As described in the Applicant's specification, if the receiver is performing joint detection, the reference signal is transmitted ("first transmission mode"), and if the transmitter is performing joint pre-

equalization, the reference signal is omitted and data redundancy is provided in place of the reference signal (“second transmission mode”).

In support of the rejection, the Examiner contends that although “Jepsen does not disclose that the additional data is redundancy data of the data signal, . . . [i]t would have been obvious to . . . transmit redundant data instead of additional data in Jepsen’s system, as suggested by Jones, to increase the probability of accurate reception of data.” (Final Office Action, p. 3). However, this contention is factually and legally incorrect. As clearly indicated throughout Jepsen, the object of Jepsen is to increase the amount of data which is transmitted in each burst by replacing the training sequence with user data. (See, e.g., col. 1, l. 64-67; col. 3, l. 50-51; and col. 8, l. 11-12). Jepsen indicates that this is possible in the GSM transmission system because the "environment is characterized by the propagation conditions changing slowly with respect to the GSM frame length," (col. 8, lines 14-15), thereby allowing the training sequences from adjacent bursts to be used to provide the channel estimation measurement. Since the very object of Jepsen is to enable transmission of additional data in each burst, not only is the modification asserted by the Examiner (i.e., not transmit additional data) simply illogical in view of the teaching of Jepsen, but the modification asserted by the Examiner also changes the principle of operation of the method of Jepsen which is being modified, as well as render the method of Jepsen which is being modified unsatisfactory for its intended purpose. In this regard, Applicant notes that in order to support an obviousness conclusion, the asserted modification cannot change the principle of operation of the prior art invention being modified. MPEP 2143.01 VI (citing In re Ratti, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959)). In addition, if the asserted modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP 2143.01 V (citing In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984)). As explained above, since the very object of Jepsen is to enable transmission of additional data in each burst, the modification asserted by the Examiner directly changes the core principle of operation of Jepsen, as well as render the method of Jepsen unsatisfactory for its intended purpose, thereby directly negating the obviousness conclusion as a matter of law.

With respect to the Examiner’s asserted motivation for making the modification of Jepsen with the teaching of Jones (i.e., “to increase the probability of accurate reception of data”), this asserted motivation is also illogical. Applicant notes that if one of ordinary skill in

the art were concerned about the accurate reception of data, it would be far more logical to maintain the training sequence since this serves to improve the reception ability of the receiver by providing an accurate estimation of the transmission channel. In other words, if the reception of the data was so bad that additional redundancy had to be provided in order to ensure accurate reception, then it makes no sense to not transmit the training sequence in the data burst, since only when the reception conditions are sufficiently good can the training sequence be omitted (Jepsen clearly states (e.g., at col. 3, l. 59-64) that the training data may be replaced by data “if the propagation characteristics and training data requirement of the central station and remote units permit” such replacement).

Independent of the above, the Examiner further contends that although “Jepsen does not disclose eliminating the training sequence if the interference elimination is performed at the transmitter, . . . [A]APA discloses that interference can also be eliminated in the transmitter if the channel pulse responses are known . . . , [in which case] transmission of a reference signal is then not necessary . . . [and hence] [i]t would have been obvious to . . . eliminate the training sequence in the data burst if channel pulse responses are known to the transmitter in Jepsen’s system, as suggested by [A]APA, therefore, additional data can be transmitted to increase throughput.” In this regard, Applicant notes that the Examiner does not explicitly address the claimed limitation of “said selection [between the first transmission mode and the second transmission mode] being dependent on whether interference elimination is performed at the receiver or the transmitter”; instead, the Examiner implicitly argues that the teaching of AAPA would motivate one of ordinary skill in the art to modify the method of Jepsen to (a) incorporate the interference elimination performed at the transmitter, and (b) eliminate the training data if the interference elimination is performed at the transmitter. However, this asserted modification simply does not make any sense in several respects, as explained in detail below.

First, the Examiner’s implicit argument to modify the method of Jepsen to incorporate the interference elimination performed at the transmitter is premised on the hypothetical condition that the channel pulse responses are known to the transmitter in Jepsen’s system. However, there is simply no such suggestion in Jepsen, and the Examiner certainly has not provided any such evidence that this condition would be inherent.

Second, Jepsen doesn't suggest anything about interference elimination at the transmitter, and Jepsen clearly states that the midamble containing the training data may be replaced by data "if the propagation characteristics and training data requirement of the central station and remote units permit" such replacement. (Col. 3, l. 59-64). Accordingly, if one assumes that the existing transmission condition in Jepsen is such that the training data in the data burst may be eliminated (which is the assumption made by the Examiner), this necessarily implies that the existing transmission condition is satisfactory for acceptable communication, and it simply doesn't make any sense that one of ordinary skill in the art would even consider performing an interference elimination in the Jepsen system under this satisfactory condition, let alone consider performing an interference elimination in the transmitter.

Third, to the extent the Examiner is combining the teachings of Jepsen, Jones and AAPA in an attempt to arrive at the claimed feature that "in the second transmission mode, avoiding transmitting the reference signal by the transmitter in each data burst and instead transmitting additional redundancy data of the data signal in each data burst," the Examiner's rationale for modifying Jepsen with the teachings of Jones completely contradicts the Examiner's rationale for modifying Jepsen with the AAPA. In this regard, the Examiner states that: (a) it would have been obvious to "transmit redundant data instead of additional data in Jepsen's system, as suggested by Jones, to increase the probability of accurate reception of data"; and (b) "[i]t would have been obvious to . . . eliminate the training sequence in the data burst if channel pulse responses are known to the transmitter in Jepsen's system, as suggested by [A]APA, therefore, additional data can be transmitted to increase throughput." However, if the reception of the data was so bad that additional redundancy had to be provided in order to ensure accurate reception (which is the condition assumed by the Examiner in modifying Jepsen with Jones), then it makes no sense to not transmit the training sequence in the data burst, since it is clear that only when the reception conditions are sufficiently good can the training sequence be omitted (and Jepsen clearly reiterates this point, e.g., at col. 3, l. 59-64).

For at least the foregoing reasons, Applicant submits that the overall teachings of Jepsen, Jones and AAPA cannot render claim 9 and its dependent claims 10, 13 and 15-16 obvious, and reversal of the obviousness rejection of claims 9-10, 13 and 15-16 is requested.

B. Rejection of Claims 11-12 under 35 U.S.C. 103(a)

Claims 11-12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,724,815 ("Jepsen"), U.S. Patent No. 6,657,949 ("Jones"), and Applicant's admitted prior art ("AAPA"), and further in view of U.S. Patent No. 5,113,413 ("Brown").³ Applicant respectfully submits that this rejection should be reversed, for at least the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. M.P.E.P. §2143. In addition, as clearly indicated by the Supreme Court, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. See KSR Int'l Co. v. Teleflex, Inc., 82 U.S.P.Q.2d 1385 (2007). In this regard, the Supreme Court further noted that "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." Id., at 1396. To the extent that the Examiner may be relying on the doctrine of inherent disclosure in support of the obviousness rejection, the Examiner must provide a "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art." (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Claims 11-12 ultimately depend on independent claim 9. As explained above in connection with parent claim 9, the overall teachings of Jepsen, Jones and AAPA simply do not render claim 9 obvious. In addition, the teachings of Brown fail to remedy the deficiencies of Jepsen, Jones and AAPA as applied against claim 9. Therefore, the overall teachings of

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³ On p. 6 of the Final Office Action, the Examiner states that the rejection is based on the combination of Jepsen, Jones, Klein, and Brown, but the Examiner never identifies what Klein is, let alone discusses Klein in the detailed discussion of the rejection. Applicant assumes for the purpose of this appeal that "Klein" refers to AAPA.

Jepsen, Jones, AAPA and Brown do not render claim 9 and its dependent claims 11 and 12 obvious.

In view of the above, reversal of the obviousness rejection of claims 11-12 is respectfully requested.

C. Rejection of Claim 14 under 35 U.S.C. 103(a)

Claim 14 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,724,815 ("Jepsen"), U.S. Patent No. 6,657,949 ("Jones"), and Applicant's admitted prior art ("AAPA"), and further in view of U.S. Patent No. 6,760,589 ("Hobbis").⁴ Applicant respectfully submits that this rejection should be reversed, for at least the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. M.P.E.P. §2143. In addition, as clearly indicated by the Supreme Court, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. See KSR Int'l Co. v. Teleflex, Inc., 82 U.S.P.Q.2d 1385 (2007). In this regard, the Supreme Court further noted that "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." Id., at 1396. To the extent that the Examiner may be relying on the doctrine of inherent disclosure in support of the obviousness rejection, the Examiner must provide a "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art." (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

⁴ On p. 6 of the Final Office Action, the Examiner states that the rejection is based on the combination of Jepsen, Jones, Klein, and Hobbis, but the Examiner never identifies what Klein is, let alone discusses Klein in the detailed discussion of the rejection. Applicant assumes for the purpose of this appeal that "Klein" refers to AAPA.

Claim 14 depends on independent claim 9. As explained above in connection with parent claim 9, the overall teachings of Jepsen, Jones and AAPA simply do not render claim 9 obvious. In addition, the teachings of Hobbis fail to remedy the deficiencies of Jepsen, Jones, and AAPA as applied against claim 9. Therefore, the overall teachings of Jepsen, Jones, AAPA and Hobbis do not render claim 9 and its dependent claim 14 obvious.

In view of the above, reversal of the obviousness rejection of claim 14 is respectfully requested.

VIII. CONCLUSION

For the foregoing reasons, it is respectfully submitted that the final rejections of claims 9-16 should be reversed.

Claims Appendix, Evidence Appendix and Related Proceedings Appendix sections are found in the attached pages.

Respectfully submitted,

KENYON & KENYON LLP

 (R. NO.
36,197)

Dated: February 10, 2009

By: SONG LEE for Gerard Messina
Gerard A. Messina
Reg. No. 35,952
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646

**APPENDIX TO APPELLANT'S APPEAL BRIEF
UNDER 37 C.F.R. § 41.37**

CLAIMS APPENDIX

The claims involved in this appeal, claims 9-16, in their current form after entry of all amendments presented during the course of prosecution, are set forth below:

9. A data transmission method, comprising:

transmitting a data signal between a transmitter and a receiver as a data stream of data bursts in either a first transmission mode or a second transmission mode;

in the first transmission mode, transmitting a reference signal by the transmitter in each data burst, the reference signal being evaluated in the receiver; and

in the second transmission mode, avoiding transmitting the reference signal by the transmitter in each data burst and instead transmitting additional redundancy data of the data signal in each data burst;

wherein a selection between the first transmission mode and the second transmission mode is made, said selection being dependent on whether interference elimination is performed at the receiver or at the transmitter.

10. The method according to claim 9, wherein:

the additional redundancy data are provided by data of the data signal that are transmitted in repetition.

11. The method according to claim 10, wherein:

the data transmitted in repetition are received in repetition by the receiver and are evaluated separately in the receiver.

12. The method according to claim 11, further comprising:

selecting a data version of the data transmitted in repetition having a stronger received signal for at least one of further processing and delivery to a user.

13. The method according to claim 9, further comprising:

in the second transmission mode, eliminating interference in the transmitter.

14. The method according to claim 9, further comprising:
transmitting a plurality of data streams simultaneously according to a CDMA technique.
15. The method according to claim 9, wherein:
the data bursts have at least two data blocks, between which a block is arranged which is used, in the first transmission mode, for the reference signal, and which is used, in the second transmission mode, for the additional redundancy data.
16. The method according to claim 9, further comprising:
selecting a data format for the data signal to be transmitted in both the first transmission mode and the second transmission mode so as to be identical.

EVIDENCE APPENDIX

In the present application, there has been no evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132, or other evidence entered by the Examiner and relied upon by Appellant in the present appeal.

RELATED PROCEEDINGS APPENDIX

No appeal or interference which will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal is known to exist.